

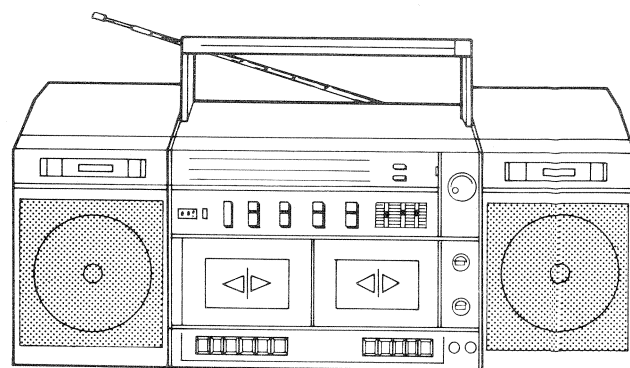
GoldStar

SERVICE MANUAL

STEREO DOUBLE CASSETTE RECORDER

CAUTION

BEFORE SERVICING THE CHASSIS, READ THE "SAFETY PRECAUTIONS", IN THIS MANUAL



MODEL: TW-P52
TW-P53



GoldStar

To the service technician

The service manual contains detailed service information for model TW-P52 and TW-P53.

The basic difference between model TW-P52 and TW-P53 is radio band.

For example:

Model TW-P52 has the functions of FM, MW and LW.


Model TW-P53 has the functions of FM, MW and SW.

Illustration of the model appears on front cover.

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SAFETY PRECAUTION

Many electrical and mechanical parts in this chassis have special safety-related characteristics. These characteristics are often passed unnoticed by a visual inspection and the protection afforded by them cannot necessarily be obtained by using replacement components rated for higher voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in this manual, electrical components having such features are identified by a  in the schematic diagram and the parts list. Before replacing any of these components, read the parts list in this manual carefully. The use of substitute replacement parts which do not have the same safety characteristics as specified in the parts list may create shock, fire or other hazards.

SPECIFICATIONS

•MW

| | |
|-------------------------------|------------------------------|
| Frequency Range | 515—1630 KHz |
| Intermediate Frequency | 465±1 KHz |
| Usable Sensitivity | 52dB (400 Hz, 30% Mod) |
| S/N Ratio | 40 dB |
| I.F. Rejection Ratio | 30dB |
| 10% T.H.D. Power Output | 1500 mW (DC) 1200 mW (AC) |
| T.H.D. | 3% |
| Frequency Response | 125—2,000 Hz |

•FM

| | |
|-----------------------------------|------------------------------|
| Frequency Range | 87.35—108.25 MHz |
| Intermediate Frequency | 10.7±0.1 MHz |
| Usable Sensitivity | 14dB |
| S/N Ratio | 60dB |
| I.F. Rejection Ratio | 60dB |
| Automatic Frequency Control | 280dB |
| 10% T.H.D. Power Output | 1500 mW (DC) 1200 mW (AC) |
| T.H.D. | 3% |
| Frequency Response | 0±4dB |
| Stereo Separation | 20dB |
| Stereo T.H.D. | 5% |

•LW

| | |
|------------------------------|-------------|
| Frequency Range | 140—290 KHz |
| Intermediate Frequency | 455±1 KHz |
| Usable Sensitivity | 65dB |
| S/N Ratio | 30dB |
| I.F. Rejection | 20dB |

•SW

| | |
|------------------------------|---------------|
| Frequency Range | 5.17—18.5 MHz |
| Intermediate Frequency | 455±1 KHz |
| Usable Sensitivity | 45dB |
| S/N Ratio | 35dB |

•TAPE

| | |
|---------------------------|----------------------------|
| Tape Speed | 4.75 cm/sec. |
| Wow & Flutter | 0.35% |
| Frequency Response | 125—8,000 Hz |
| Distortion | 3% (PLAY), 5% (REC/PLAY) |
| 10% T.H.D. Output | 150 mW |
| S/N Ratio | 40dB (PLAY), 38dB (REPLAY) |
| Erase Ratio | 50dB |
| Graphic E.Q. Effect | ±8dB |

•GENERAL

| | |
|----------------------|-------------------------------|
| Circuit System | 4 Track 2 Channel Stereo |
| Speaker | Round 3.5" x 2 |
| | Piezo x 2 |
| Power Source | DC: 9V ("D" cell x 6) |
| | AC: 220V, 50 Hz |
| Antenna | FM/SW: Telescopic Rod Antenna |
| | MW/LW: Ferrite Bar Antenna |

DIAL CORD STRINGING

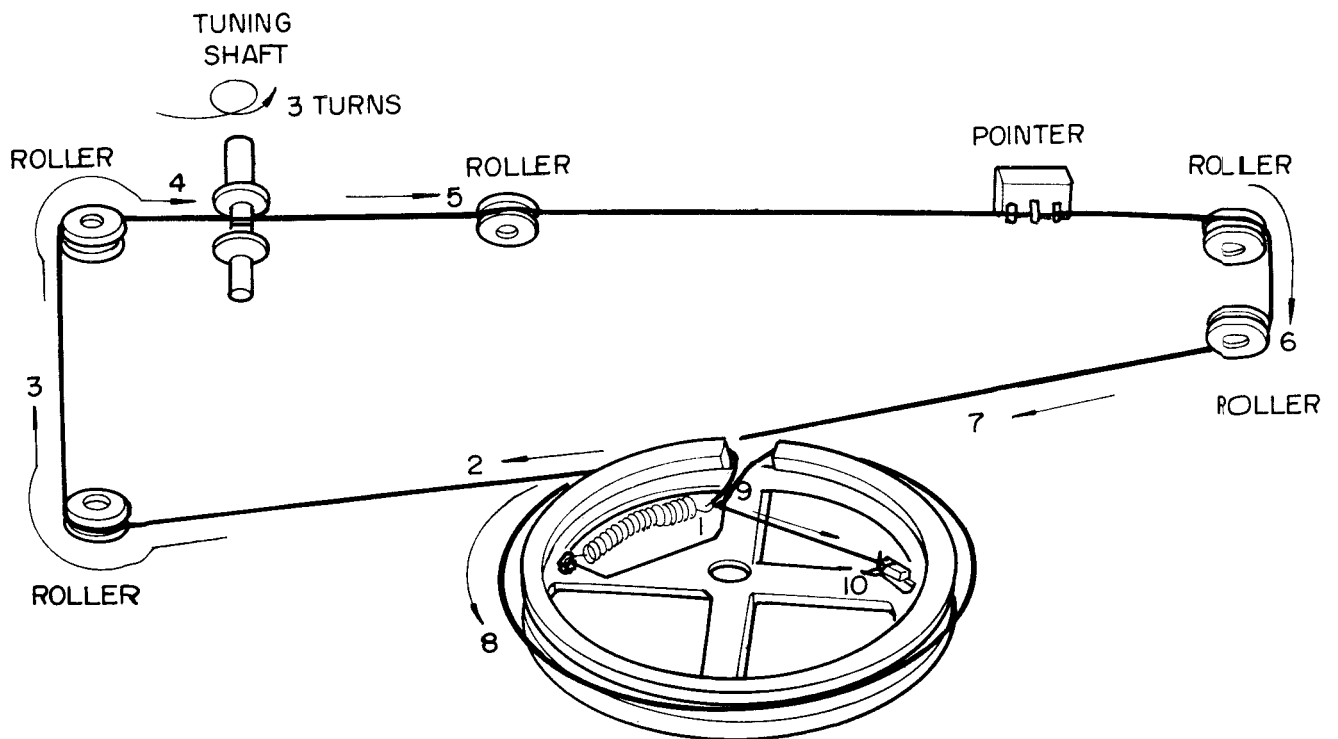


Figure 1.

Set the tuning capacitor to minimum frequency and string the cord following the numbers in figure 1.

ADJUSTMENT

Equipment Needed

1. AM Signal Generator
2. FM Signal Generator
3. IF Sweep Generator with marker Capabilities
4. FM Stereo Signal Generator
5. Oscilloscope
6. Output Meter (VTVM)
7. Frequency Counter
8. Nonmetallic Alignment Tools

Important

1. Check power-source voltage.
2. Set the function switch to band being aligned.
3. Turn volume control to minimum unless otherwise noted.
4. Connect low side of signal source and output indicator to chassis ground unless otherwise specified.
5. Keep the signal input as low as possible to avoid AGC and AFC action.
6. Standard modulation is 400Hz at 30% for AM. (400Hz at 22.5kHz deviation for FM)

Test and adjustment points

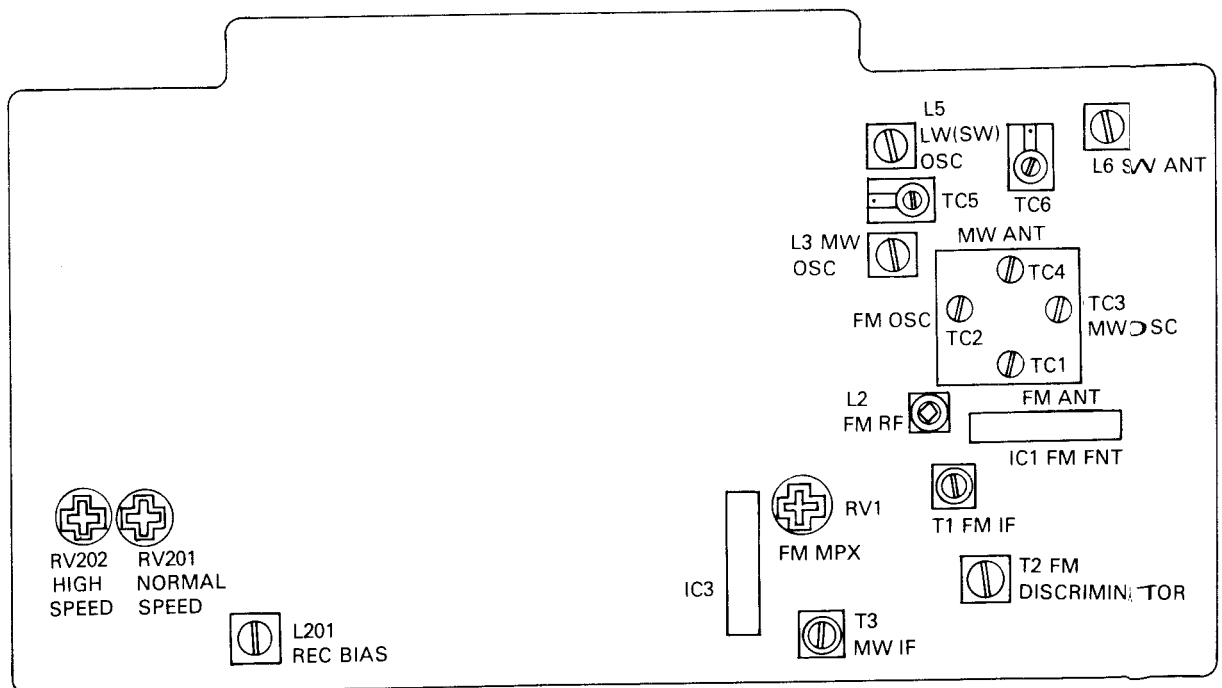


Figure 2. Main P.C. Board

MW Section

| Circuit Alignment | Equipment Connection | Step | Generator Frequency | Dial Setting | Adjustment |
|-------------------|---|------|----------------------------|--------------------------|---|
| IF | Connect input of IF Genescope to C62 (+), output to MW Ant coil through the dummy. (Figure 3) | 1 | 465. 455 KHz (400 Hz Mod.) | Tuning Gang fully closed | T3 (MW IFT) Adjust for maximum output |
| | | 2 | | | Repeat until no further improvement can be made. |
| Band | AM Signal Generator with loop antenna. Output Meter (VTVM) across 4 ohm load. (Figure 4) | 3 | 515 KHz (400Hz Mod.) | Tuning Gang fully closed | L3 (MW OSC. Coil) Adjust for maximum output. |
| | | 4 | 1630 kHz (400 Hz Mod.) | Tuning Gang fully open | TC3 (MW OSC, Trimmer). Adjust for maximum output. |
| | | 5 | | | Repeat steps 3 & 4 |
| Tracking | AM Signal Generator with loop antenna. Output Meter (VTVM) across 4 ohm load (Figure 4) | 6 | 600 kHz (400 Hz Mod.) | Tune to signal | L4 (MW Ant. Coil). Adjust coil on ferrite core for maximum. |
| | | 7 | 1400 kHz (400 Hz Mod.) | Tune to signal | TC4 (MW Ant. Trimmer) Adjust for maximum output. |
| | | 8 | | | Repeat steps 6 & 7 several times. |

LW Section

| Circuit Alignment | Equipment Connection | Step | Generator Frequency | Dial Setting | Adjustment |
|-------------------|--|------|-----------------------|--------------------------|---|
| Band | AM Signal Generator with loop antenna Output Meter (VTVM) across 4 ohm load (Figure 4) | 1 | 140 kHz (400 Hz Mod.) | Tuning Gang fully closed | L5 (LW OSC. Coil). Adjust for Coil on ferrite core. |
| | | 2 | 290 kHz (400 Hz Mod.) | Tuning Gang fully open | TC5 (LW OSC. Trimmer). Adjust for maximum output. |
| | | 3 | | | Repeat steps 1 & 2 |
| Tracking | AM Signal Generator with loop antenna. Output Meter (VTVM) across 4 ohm load. (Figure 4) | 4 | 150 kHz | Tune to signal | L4 (LW Ant. Coil). Adjust for maximum output. |
| | | 5 | 270 kHz | Tune to signal | TC6 (LW Ant. Trimmer) Adjust for maximum output. |
| | | 6 | | | Repeat steps 4 & 5 several times. |

SW Section

| Circuit Alignment | Equipment Connection | Step | Generator Frequency | Dial Setting | Adjustment |
|-------------------|---|------|------------------------|--------------------------|---|
| Band | AM Signal Generator to antenna terminals through SW dummy matching network. Output Meter (VTVM) across 4 ohm load. (Figure 6) | 1 | 5.7 MHz (400 Hz Mod.) | Tuning Gang fully closed | L5 (SW OSC. Coil). Adjust for maximum output. |
| | | 2 | 18.5 MHz (400 Hz Mod.) | Tuning Gang fully open | TC5 (SW OSC, Trimmer). Adjust for maximum output. |
| | | 3 | | | Repeat steps 1 & 2 |
| Tracking | AM Signal Generator to antenna terminals through SW dummy matching network. Output Meter (VTVM) across 4 ohm load. (Figure 6) | 4 | 6.5 MHz | Turn to signal | L6 (SW Ant. Coil). Adjust for maximum output. |
| | | 5 | | | Repeat steps 4 & 5 several times. |

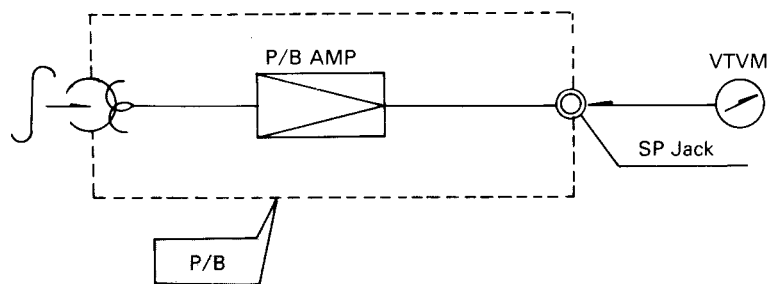
FM Section

| Circuit Alignment | Equipment Connection | Step | Generator Frequency | Dial Setting | Adjustment |
|-------------------|---|------|--------------------------|--------------------------|---|
| IF | Connect input of IF Genescope to C20(-), output to the body of ICI through the dummy. (Figure 5) | 1 | 10.7 MHz | Tuning Gang fully closed | T1, T2 (FM IFT). Adjust for maximum symmetrical response (10.7 MHz at the center point) |
| | | 2 | | | Repeat step 1 |
| Band | FM Signal Generator to antenna terminals through 75 ohm antenna matching network. Output Meter (VTVM) across 4 ohm load. (Figure 7) | 3 | 87.35 MHz (400Hz Mod.) | Tuning Gang fully closed | L2 (FM OSC, Coil). Adjust for maximum output |
| | | 4 | 108.25 MHz (400 Hz Mod.) | Tuning Gang fully open | TC2 (FM OSC. Trimmer) Adjust for maximum output |
| | | 5 | | | Repeat steps 3 & 4 several times. |
| Tracking | FM Signal Generator to antenna terminals through 75 ohm antenna matching network. Output Meter (VTVM) across 4 ohm load. (Figure 7) | 6 | 90 MHz (400 Hz Mod.) | Tune to signal | L1 (FM Ant. Coil). Adjust for maximum output |
| | | 7 | 106 MHz (400 Hz Mod.) | Tune to signal | TC1 (FM Ant Trimmer). Adjust for maximum output. |
| | | 8 | | | Repeat steps 6 & 7 to obtain suitable sensitivity at 90 MHz and 106 MHz. |

FM MPX

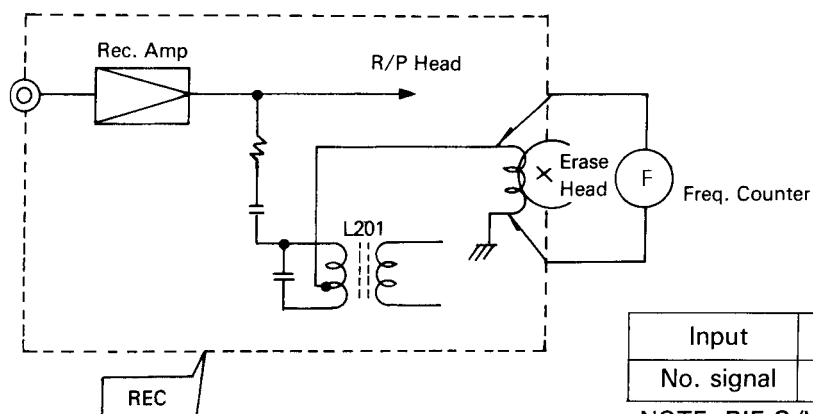
| Circuit Alignment | Equipment Connection | Step | Generator Frequency | Dial Setting | Adjustment |
|----------------------|--|------|----------------------|--------------|--|
| 38 kHz \pm 0.1 kHz | FM Stereo Generator composite out connected to Ext. Mod of FM Signal Generator. | 1 | | | First make sure FM section properly aligned. |
| | FM Signal Generator to antenna terminals matching 75 ohm antenna matching network. Frequency Counter across TP (Pin No. 6 of IC3) (Figure 8) | 2 | 98 MHz (1 mV output) | 98 MHz | Adjust RV1 for Frequency Counter indicates 38 kHz \pm 0.1 KHz. |

Azimuth Adjustment



| Input | Adjust for | Adjustment |
|------------------|------------|-------------------------|
| MTT-114 (10 kHz) | Maximum | Azimuth Adjusting screw |

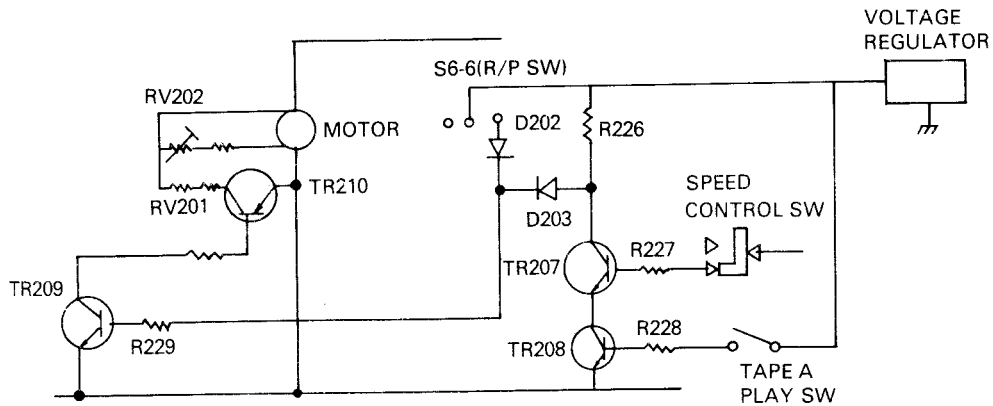
Bias Frequency Adjustment



| Input | Adjust for | Adjustment |
|------------|------------|------------|
| No. signal | 60 kHz | L201 |

NOTE. RIF S/W: "2" position.

MOTOR SPEED ADJUSTMENT



① HI-SPEED ADJUSTMENT

Dubbing switch: High-speed

| Input | Adjust for | Adjustment | Output |
|---------|-------------------|------------|-------------|
| GTT-111 | 6000Hz \pm 30Hz | RV202 | Speaker Out |

② NORMAL-SPEED ADJUSTMENT

Dubbing switch: Normal-speed

| Input | Adjust for | Adjustment | Output |
|---------|-------------------|------------|-------------|
| GTT-111 | 3000Hz \pm 30Hz | RV201 | Speaker out |

TEST EQUIPMENT CONNECTIONS

Figure 3 MW IF

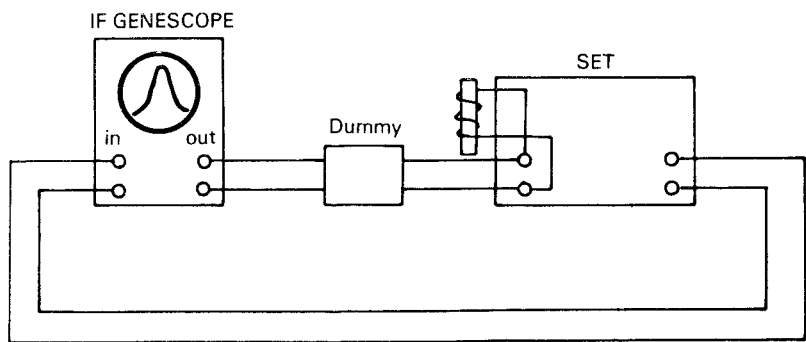


Figure 4. LW & MW Band/Tracking

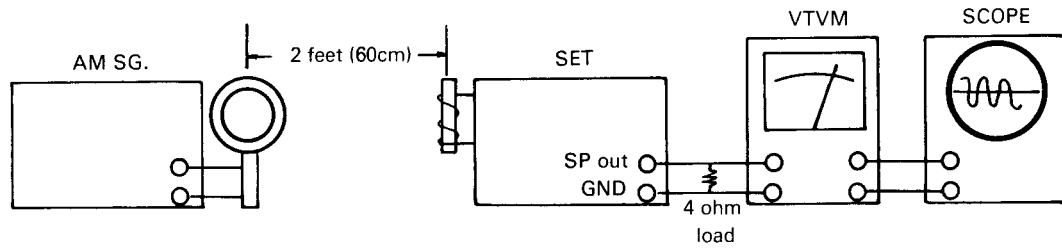


Figure 5. FM IF

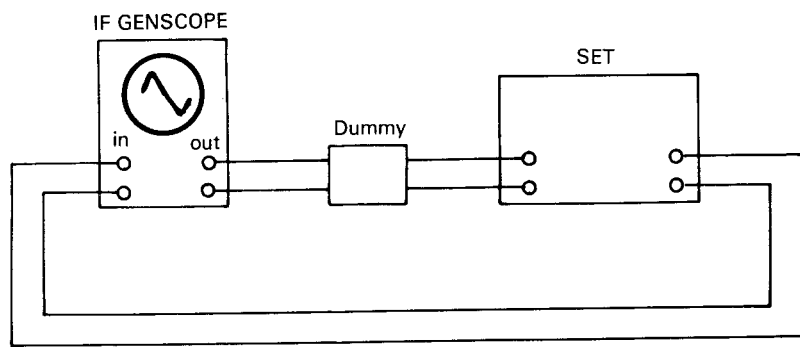


Figure 6. SW Band/Tracking

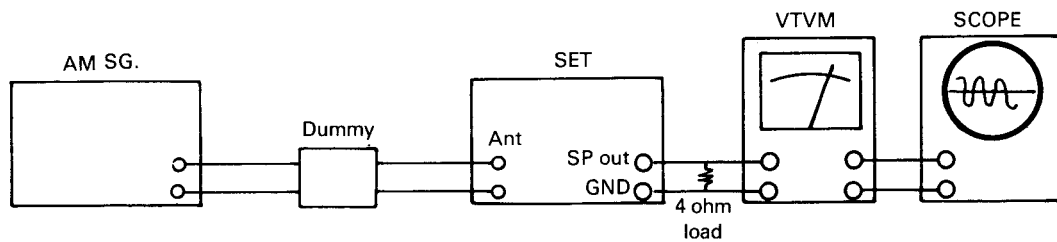


Figure 7. FM Band/Tracking

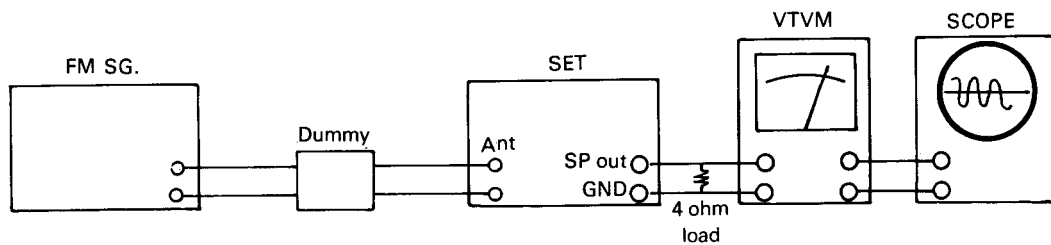
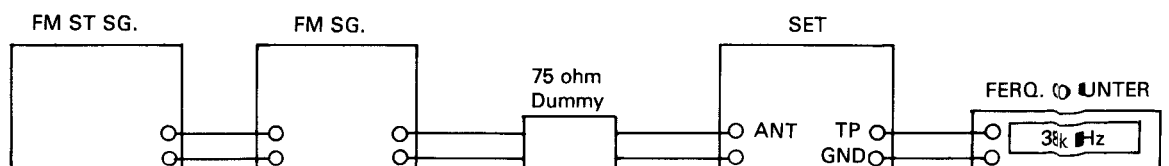


Figure 8. 38 kHz Pilot



STANDARD MAINTENANCE

Tape Head and Capstan Cleaning

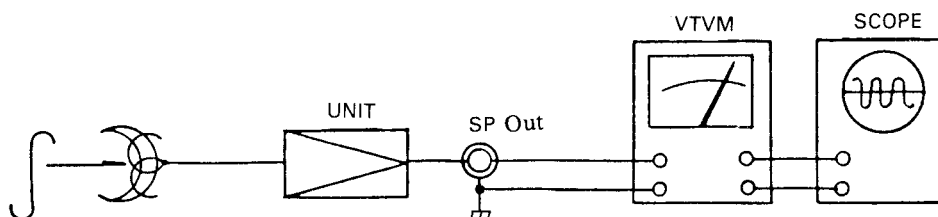
Whenever a unit is brought in for service or repair, clean the tape heads, capstan drive shaft and other tape handling surfaces to ensure proper tape handling and optimum frequency response. Use a cotton swab dipped in head cleaner or denatured alcohol to clean all tape handling surfaces. Wipe dry.

Tape Head Demagnetization

Do not use magnetized tools near the tape heads, since they can magnetize the head. After long period of the heads will retain a small amount of residual magnetism. A magnetized head will result in loss of high frequency response and increased noise, use a standard tape head demagnetizer and follow the instructions supplied with it to demagnetize the heads.

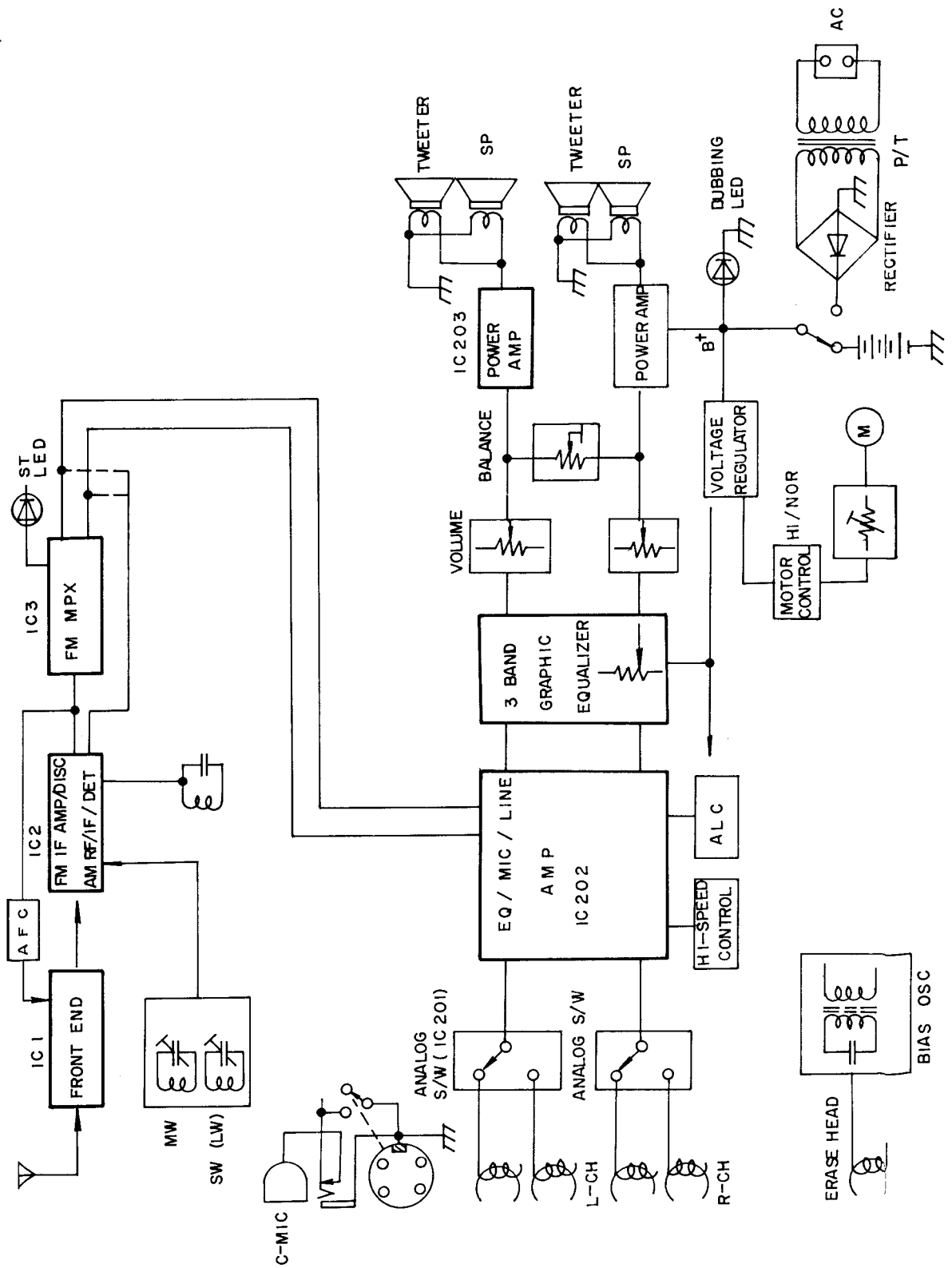
Azimuth Adjustment

1. Azimuth adjustment is normally required when the head is replaced, or for cases of cross-talk and poor high frequency response. A test tape is required for such adjustment.
2. Connect a scope or VTVM to the right channel EXT. SP jack. Insert a test tape into the unit (use a test tape such as TEAC MTT-114, MTT-115). Adjust the azimuth adjustment screw for maximum output onto the right channel. Use glyptal or other non-hardening cement to lock the azimuth adjustment screw.



(Left channel is the same as right)

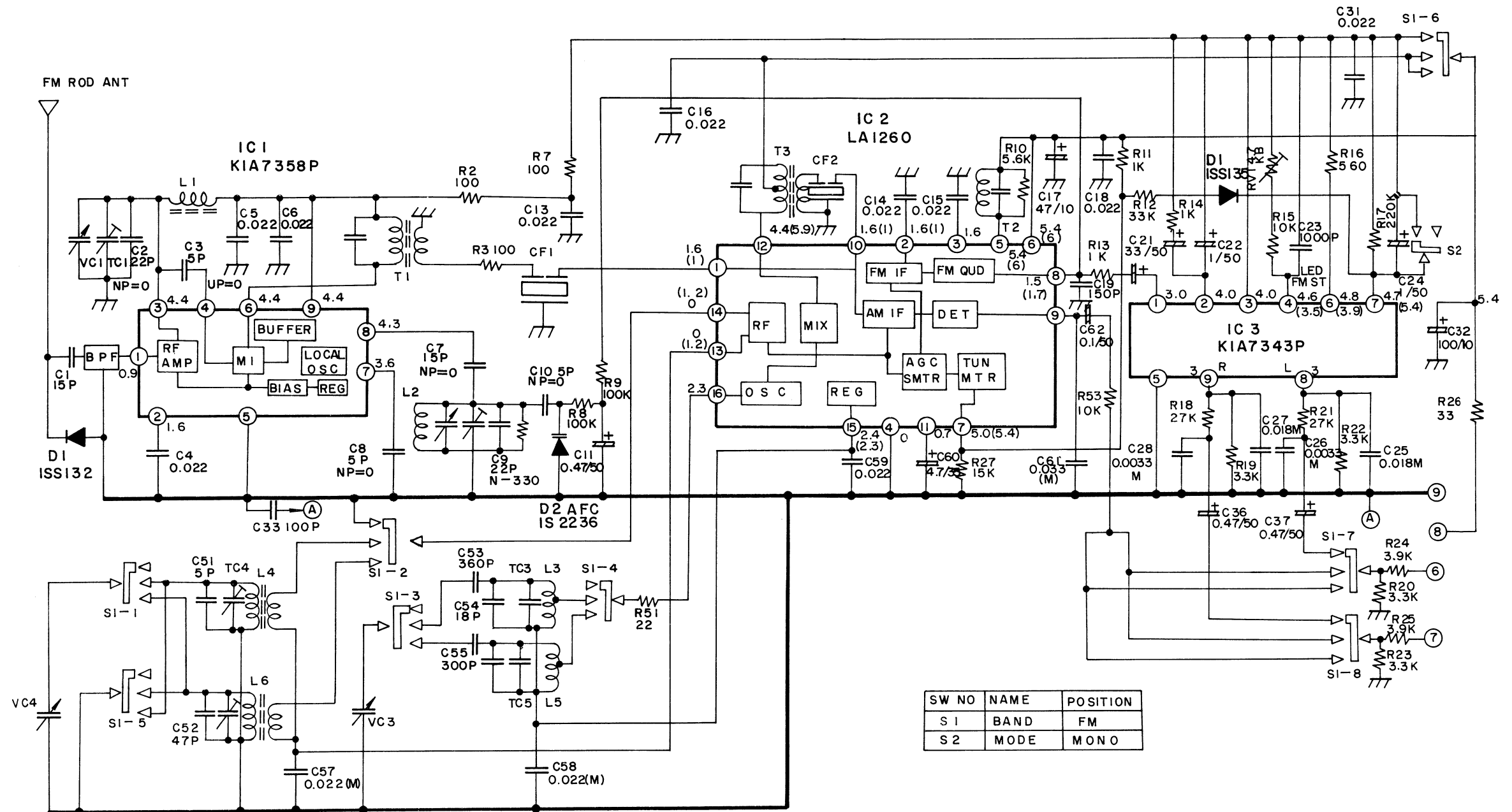
BLOCK DIAGRAM



SCHEMATIC DIAGRAM

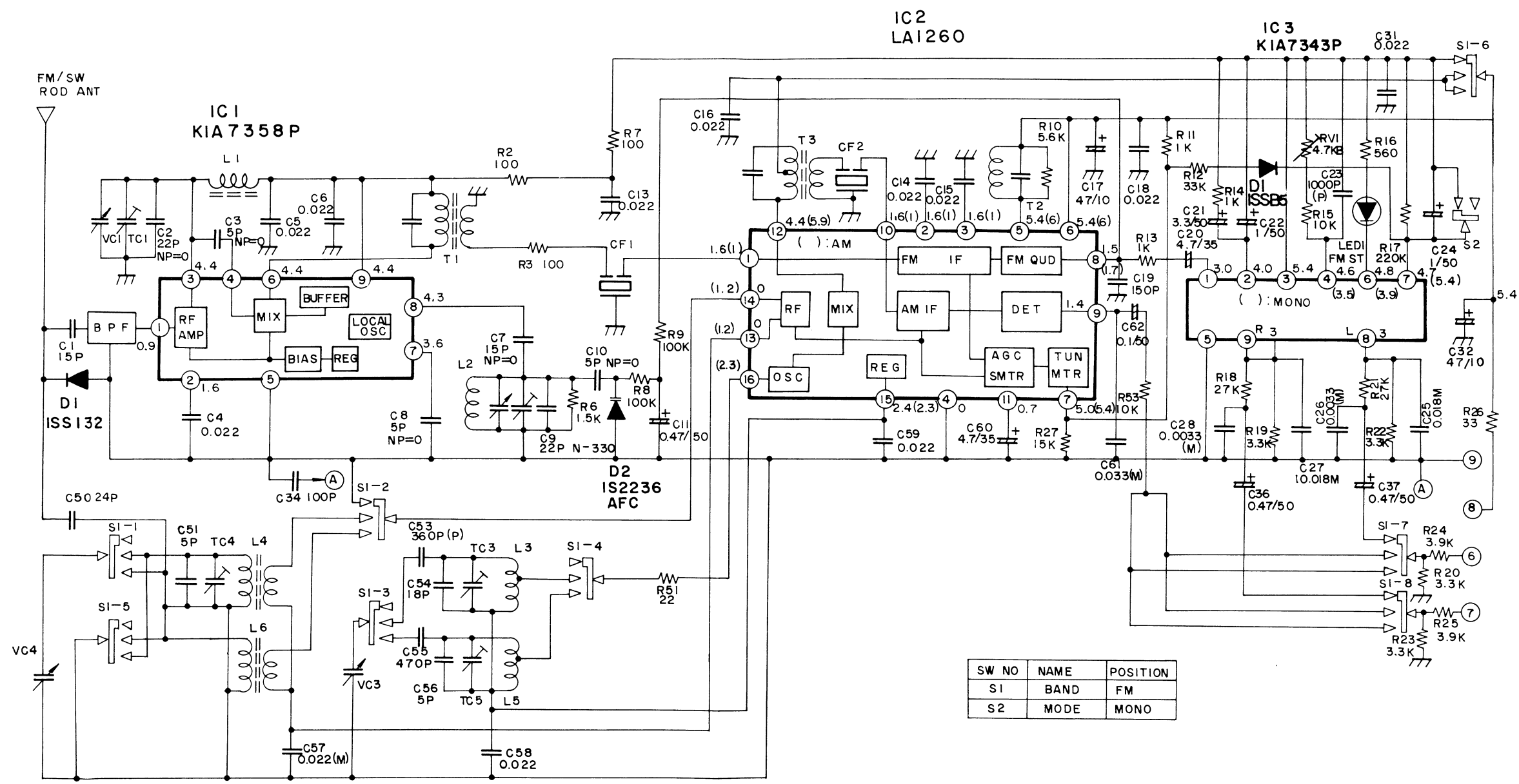
• RF CIRCUIT (TW-P52)

TW-P52



• RF CIRCUIT (TW-P53)

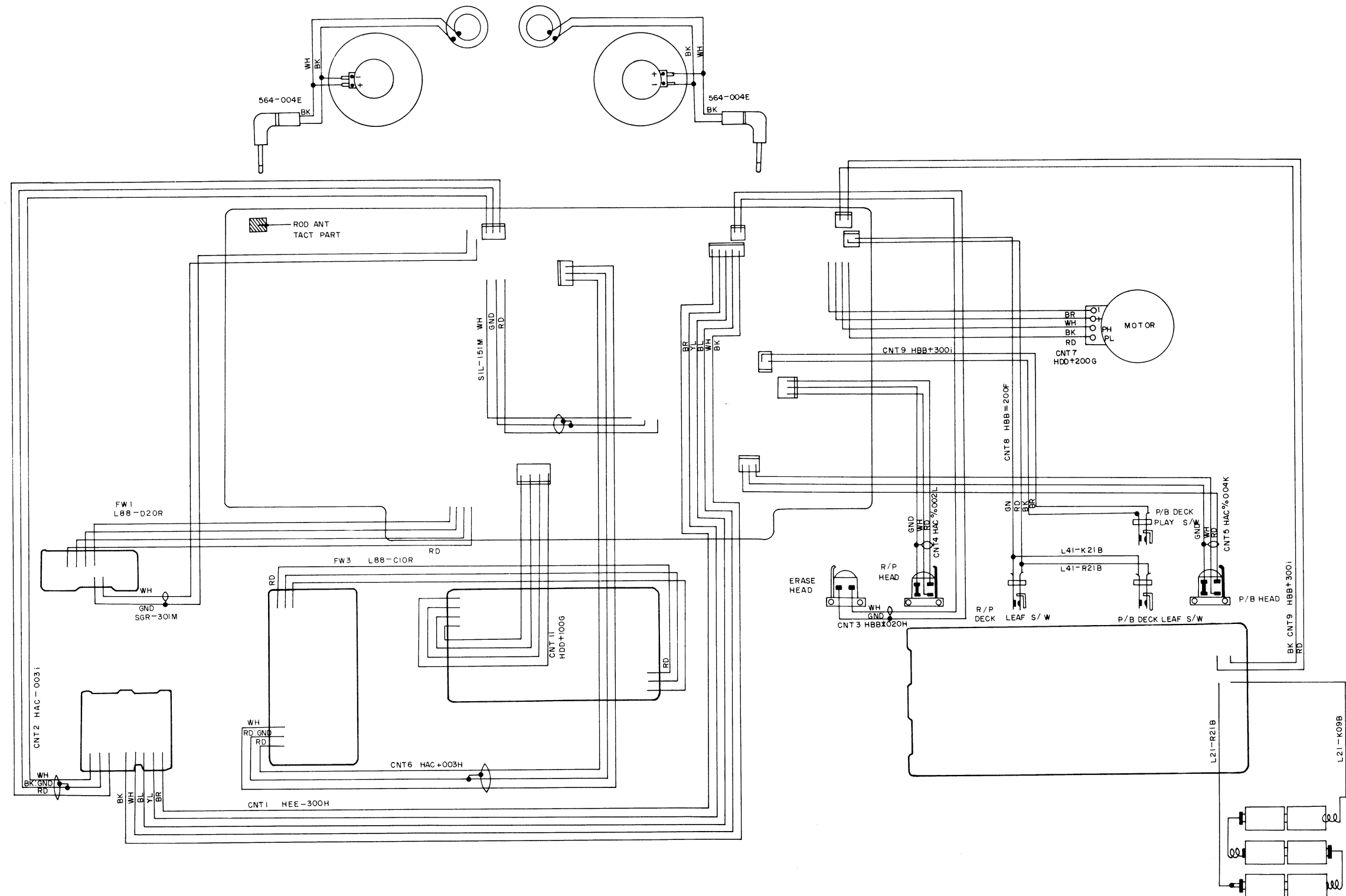
TW-P53



TW-P52, TW-P53



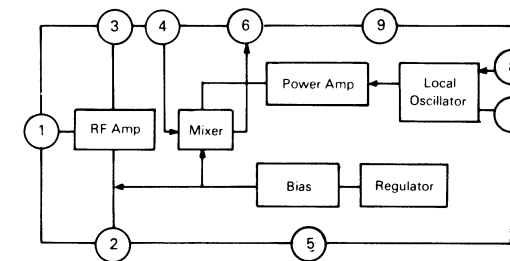
WIRING DIAGRAM



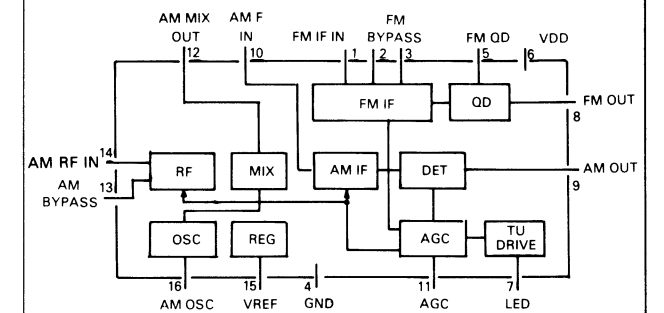
NOTES

IC INTERNAL DIAGRAM

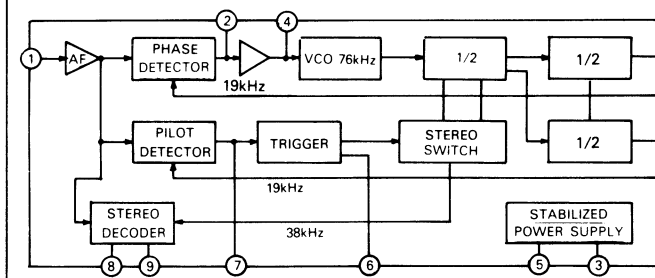
IC1 KIA7358P



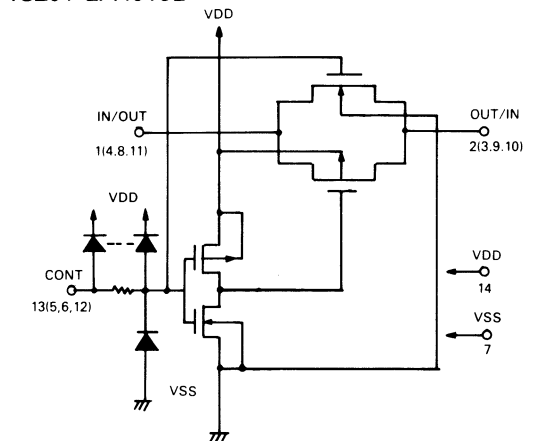
IC2 LA1260



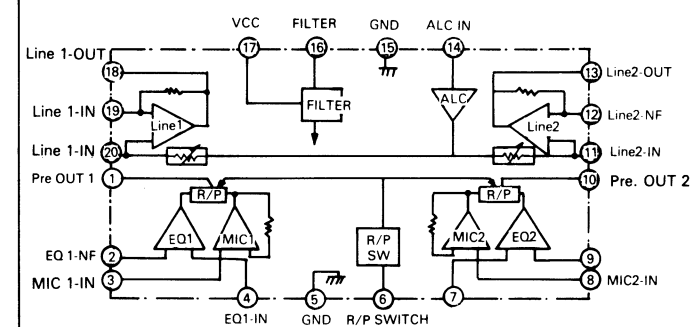
IC3 KIA7343P



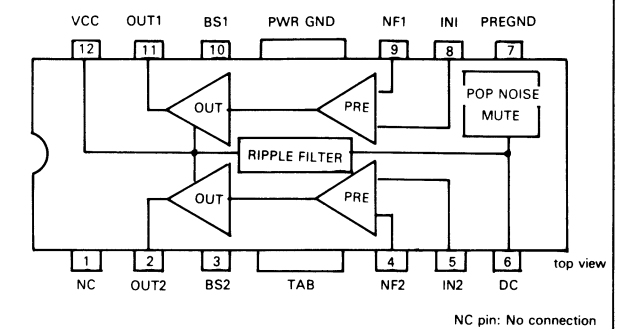
IC201 LA4016B



IC202 M51162P



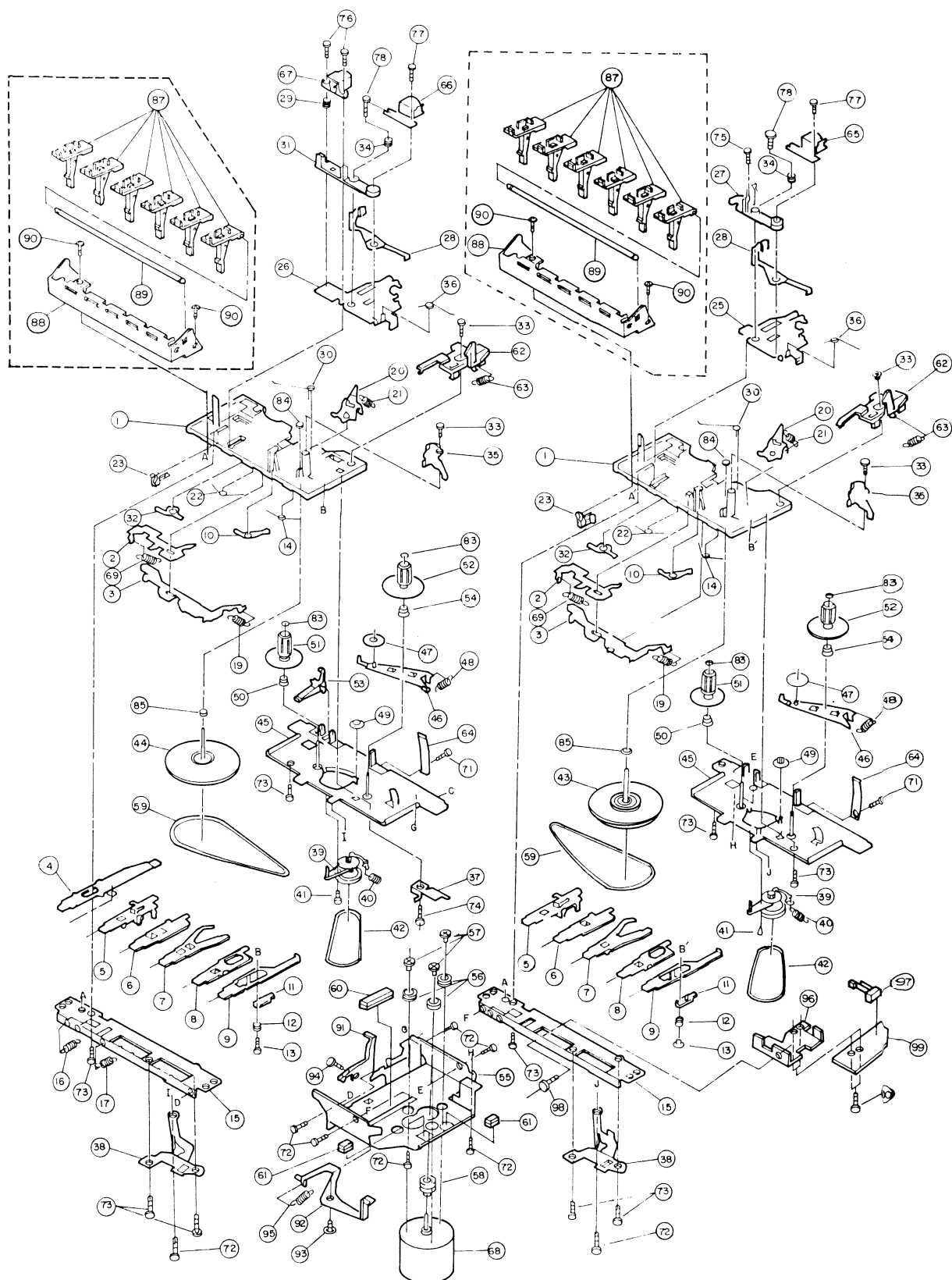
IC203 LA4550



• CABINET

This exploded view diagram illustrates the assembly of a kitchen cabinet. The components are shown in their relative positions, with callout numbers indicating specific parts. The main cabinet body is shown in the center, with various doors and drawers being attached. The doors are shown with different handle styles, and the drawers are shown with different front panel designs. The hardware, including hinges, knobs, and pulls, is shown being installed on the doors and drawers. The diagram also shows the internal structure of the cabinet, including the shelves and the drawer slides. The callout numbers are as follows: 1-1, 1-2, 1-3, 1-4, 1-5, 1-6, 1-7, 1-8, 1-9, 1-10, 1-11, 1-12, 1-13, 1-14, 1-15, 1-16, 1-17, 1-18, 1-19, 1-20, 1-21, 1-22, 1-23, 1-24, 1-25, 1-26, 1-27, 1-28, 1-29, 1-30, 1-31, 1-32, 1-33, 1-34, 1-35, 1-36, 1-37, 1-38, 1-39, 1-40, 1-41, 1-42, 1-43, 1-44, 1-45, 1-46, 1-47, 1-48, 1-49, 1-50, 1-51, 1-52, 1-53, 1-54, 1-55, 1-56, 1-57, 1-58, 1-59, 1-60, 1-61, 1-62, 1-63, 1-64, 1-65, 1-66, 1-67, 1-68, 1-69, 1-70, 1-71, 1-72, 1-73, 1-74, 1-75, 1-76, 1-77, 1-78, 1-79, 1-80, 1-81, 1-82, 1-83, 1-84, 1-85, 1-86, 1-87, 1-88, 1-89, 1-90, 1-91, 1-92, 1-93, 1-94, 1-95, 1-96, 1-97, 1-98, 1-99, 1-100, 1-101, 1-102, 1-103, 1-104, 1-105, 1-106, 1-107, 1-108, 1-109, 1-110, 1-111, 1-112, 1-113, 1-114, 1-115, 1-116, 1-117, 1-118, 1-119, 1-120, 1-121, 1-122, 1-123, 1-124, 1-125, 1-126, 1-127, 1-128, 1-129, 1-130, 1-131, 1-132, 1-133, 1-134, 1-135, 1-136, 1-137, 1-138, 1-139, 1-140, 1-141, 1-142, 1-143, 1-144, 1-145, 1-146, 1-147, 1-148, 1-149, 1-150, 1-151, 1-152, 1-153, 1-154, 1-155, 1-156, 1-157, 1-158, 1-159, 1-160, 1-161, 1-162, 1-163, 1-164, 1-165, 1-166, 1-167, 1-168, 1-169, 1-170, 1-171, 1-172, 1-173, 1-174, 1-175, 1-176, 1-177, 1-178, 1-179, 1-180, 1-181, 1-182, 1-183, 1-184, 1-185, 1-186, 1-187, 1-188, 1-189, 1-190, 1-191, 1-192, 1-193, 1-194, 1-195, 1-196, 1-197, 1-198, 1-199, 1-200, 1-201, 1-202, 1-203, 1-204, 1-205, 1-206, 1-207, 1-208, 1-209, 1-210, 1-211, 1-212, 1-213, 1-214, 1-215, 1-216, 1-217, 1-218, 1-219, 1-220, 1-221, 1-222, 1-223, 1-224, 1-225, 1-226, 1-227, 1-228, 1-229, 1-230, 1-231, 1-232, 1-233, 1-234, 1-235, 1-236, 1-237, 1-238, 1-239, 1-240, 1-241, 1-242, 1-243, 1-244, 1-245, 1-246, 1-247, 1-248, 1-249, 1-250, 1-251, 1-252, 1-253, 1-254, 1-255, 1-256, 1-257, 1-258, 1-259, 1-260, 1-261, 1-262, 1-263, 1-264, 1-265, 1-266, 1-267, 1-268, 1-269, 1-270, 1-271, 1-272, 1-273, 1-274, 1-275, 1-276, 1-277, 1-278, 1-279, 1-280, 1-281, 1-282, 1-283, 1-284, 1-285, 1-286, 1-287, 1-288, 1-289, 1-290, 1-291, 1-292, 1-293, 1-294, 1-295, 1-296, 1-297, 1-298, 1-299, 1-300, 1-301, 1-302, 1-303, 1-304, 1-305, 1-306, 1-307, 1-308, 1-309, 1-310, 1-311, 1-312, 1-313, 1-314, 1-315, 1-316, 1-317, 1-318, 1-319, 1-320, 1-321, 1-322, 1-323, 1-324, 1-325, 1-326, 1-327, 1-328, 1-329, 1-330, 1-331, 1-332, 1-333, 1-334, 1-335, 1-336, 1-337, 1-338, 1-339, 1-340, 1-341, 1-342, 1-343, 1-344, 1-345, 1-346, 1-347, 1-348, 1-349, 1-350, 1-351, 1-352, 1-353, 1-354, 1-355, 1-356, 1-357, 1-358, 1-359, 1-360, 1-361, 1-362, 1-363, 1-364, 1-365, 1-366, 1-367, 1-368, 1-369, 1-370, 1-371, 1-372, 1-373, 1-374, 1-375, 1-376, 1-377, 1-378, 1-379, 1-380, 1-381, 1-382, 1-383, 1-384, 1-385, 1-386, 1-387, 1-388, 1-389, 1-390, 1-391, 1-392, 1-393, 1-394, 1-395, 1-396, 1-397, 1-398, 1-399, 1-400, 1-401, 1-402, 1-403, 1-404, 1-405, 1-406, 1-407, 1-408, 1-409, 1-410, 1-411, 1-412, 1-413, 1-414, 1-415, 1-416, 1-417, 1-418, 1-419, 1-420, 1-421, 1-422, 1-423, 1-424, 1-425, 1-426, 1-427, 1-428, 1-429, 1-430, 1-431, 1-432, 1-433, 1-434, 1-435, 1-436, 1-437, 1-438, 1-439, 1-440, 1-441, 1-442, 1-443, 1-444, 1-445, 1-446, 1-447, 1-448, 1-449, 1-450, 1-451, 1-452, 1-453, 1-454, 1-455, 1-456, 1-457, 1-458, 1-459, 1-460, 1-461, 1-462, 1-463, 1-464, 1-465, 1-466, 1-467, 1-468, 1-469, 1-470, 1-471, 1-472, 1-473, 1-474, 1-475, 1-476, 1-477, 1-478, 1-479, 1-480, 1-481, 1-482, 1-483, 1-484, 1-485, 1-486, 1-487, 1-488, 1-489, 1-490, 1-491, 1-492, 1-493, 1-494, 1-495, 1-496, 1-497, 1-498, 1-499, 1-500, 1-501, 1-502, 1-503, 1-504, 1-505, 1-506, 1-507, 1-508, 1-509, 1-510, 1-511, 1-512, 1-513, 1-514, 1-515, 1-516, 1-517, 1-518, 1-519, 1-520, 1-521, 1-522, 1-523, 1-524, 1-525, 1-526, 1-527, 1-528, 1-529, 1-530, 1-531, 1-532, 1-533, 1-534, 1-535, 1-536, 1-537, 1-538, 1-539, 1-540, 1-541, 1-542, 1-543, 1-544, 1-545, 1-546, 1-547, 1-548, 1-549, 1-550, 1-551, 1-552, 1-553, 1-554, 1-555, 1-556, 1-557, 1-558, 1-559, 1-560, 1-561, 1-562, 1-563, 1-564, 1-565, 1-566, 1-567, 1-568, 1-569, 1-570, 1-571, 1-572, 1-573, 1-574, 1-575, 1-576, 1-577, 1-578, 1-579

• DECK MECHANISM



Note: Excluded parts in the part list are not available as replacement parts.

REPLACEMENT PARTS LIST

PRODUCT SAFETY NOTICE: Products marked with a \triangle have special characteristics important to safety. Before replacing any of these components, read carefully the safety precaution of this service manual, don't degrade the safety of the receiver through improper servicing.

• ELECTRICAL

| Ref. No. | Mfr's Part No. | Description | Ref. No. | Mfr's Part No. | Description |
|-------------------------------|----------------|------------------------------|---------------------------|----------------|-----------------------------------|
| INTEGRATED CIRCUITS | | | L5 | 634-037S | Coil, LW OSC (TW-P52) |
| IC1 | 668-108D | KIA7358P (FM Function) | | 634-020H | Coil, SW OSC (TW-P53) |
| IC2 | 668-192B | LA1260 (AM/FM IF) | L6 | 634-020F | Coil, SW ANT (TW-P53) |
| IC3 | 668-159A | KIA7343P (MPX) | L101 | 637-005B | Coil, Peaking 33 μ H |
| IC201 | 668-662B | CD4016 (Analog Switch) | L201 | 634-036C | Coil, Tape OSC |
| | | or | L301 | 637-005B | Coil, Peaking 33 μ H |
| | 668-662C | LC4016B (Analog Switch) | T1 | 644-018F | Trans. FM IF |
| IC202 | 668-660A | M51162P (EQ + Line) | T2 | 647-011E | Discriminator |
| IC203 \triangle | 668-668A | LA4550 (Power) | T3 | 644-039M | Trans. MW IF |
| TRANSISTORS | | | SWITCHES AND JACKS | | |
| TR101, 102 | 665-814B | KTC1959-Y | S1 | 556-611L | Switch, Band |
| TR131 | 665-814B | KTC1959-Y | S2 | 556-611M | Switch, Mode |
| TR161 | 665-814B | KTC1959-Y | S3 | 556-611A | Switch, Function |
| TR201, 202 | 665-814B | KTC1959-Y | S4 | 556-611M | Switch, Tape Selector |
| TR203-209 | 665-814B | KTC1959-Y | S5 | 556-631A | Switch, Hi-speed |
| TR210 | 665-813B | KTA1015-Y | S6 | 552-035B | Switch, Slide (F/P) |
| TR263 | 665-881B | 2SC2236-O | S7 | 552-614A | Switch, Slide (RF) |
| TR301, 302 | 665-814B | KTC1959-Y | J101 | 571-001C | Jack, D = 3.5 |
| TR331 | 665-814B | KTC1959-Y | J201 | 573-075E | Socket, TCS070 |
| TR361 | 665-814B | KTC1959-Y | J202 | 571-001C | Jack, D = 3.5 |
| DIODES | | | J203 | 571-102A | Jack, D = 3.5 |
| D1 | 651-031A | Switch, 1SS132 | J301 | 571-001C | Jack, D = 3.5 |
| D2 | 654-418A | AFC, 1S2236 | MISCELLANEOUS | | |
| D3, 4 | 651-031A | Switch, 1SS132 | VR1 | 611-6490 | VR, 50KA (Volume) |
| D5 | 654-772G | Zener, DZ 3.6B | VR2 | 611-948Q | VR, 50KW (Balance) |
| D101, 102 | 651-031A | Switch, 1SS132 | VR3-5 | 612-619A | VR, 100KB |
| D202 | 652-605B | Switch, 1S2472 | RV1 | 613-002C | VR, Semi-fixed 4.7KB |
| D203 | 651-031A | Switch, 1SS132 | RV202, 202 | 613-002C | VR, Semi-fixed 4.7KB |
| D261 | 654-723C | Zener, DZ6.8B | VC1-4 | 622-012C | Varicon, P62S-2BP T |
| D301, 302 | 651-031A | Switch, 1SS132 | TC5 | 623-023H | Trimmer (TW-P52) |
| D501-504 | 652-005C | Rect, DS4001 | | 623-023B | Trimmer (TW-P53) |
| LD1, 2 | 653-625A | LED, KLR208E (RD) | TC6 | 623-023H | Trimmer |
| COILS AND TRANSFORMERS | | | CF1 | 616-008A | Filter, SFE10, 7MSZ (BL, RD, OR) |
| L1 | 635-009H | Coil, FM RF | CF2 | 616-003E | Filter, SFU 465B |
| L2 | 635-020B | Coil, FM RF (OSC) | BPF | 616-011G | Filter, Band pass \triangle MB8 |
| L3 | 634-037N | Coil, MW OSC | \triangle | 641-724C | Trans, Power |
| L4 | 632-211F | Coil, MW/LW Antenna (TW-P52) | | 557-005C | Socket, AC-in |
| | 632-211E | Coil, MW Antenna (TW-P53) | | 542-035B | Condenser Mic. |

• CABINET

| Ref. No. | Mfr's Part No. | Description | Ref. No. | Mfr's Part No. | Description |
|----------|----------------|--|----------|----------------|--|
| A-12 | 681-035A | Power Cord | E-7 | 275-055L | Button, Deck (Record) |
| C-1 | 271-053B | Knob, Tuning | E-8 | 442-017A | Spring, Record |
| C-2 | 273-003A | Knob, Control | E-8-1 | 442-017B | Bracket, Record (A) |
| C-3 | 273-009A | Knob, Lever Switch | E-8-2 | 442-017C | Bracket, Record (B) |
| C-4 | 273-040A | Knob, Push | E-8-3 | 353-025D | Screw, Special |
| C-5 | 221-395C | Cover, Battery | E-9 | MRC0918J | Screw (For Deck and Spring Record Fix) |
| C-6 | 442-750A | Spring, Door | E-15 | MBC0726L | Screw, MBC + 1 |
| C-7 | 217-057A | Case, Cassette | E-16 | 513-100A | PCB Leaf Switch |
| C-8 | 236-035C | Window, Door (Left) | F-1 | 313-051A | Chassis |
| C-9 | 236-050Y | Window, Scale (TW-P52) | F-2 | 431-052A | Fulley, Dial |
| | 236-036A | Window, Scale (TW-P53) | F-3 | 423-254A | Shaft, Roller |
| C-10 | 236-037A | Window, Tuning | F-4 | 434-017A | Roller |
| C-11 | 236-051Y | Window, Function (TW-P52) | F-6 | 442-004E | Spring |
| | 236-038A | Window, Function (TW-P53) | F-7 | 353-025G | Screw, Special (For Chassis and Front) |
| C-15 | 261-038A | Handle, Ass'y | F-8 | 353-025G | Screw, Special (For Chassis and PCB) |
| C-15-1 | 324-051A | Holder, Handle | F-9 | MPC1530J | Screw, MPC + 2 (For Fulley and VR) |
| C-15-2 | 261-039A | Handle Bar | F-10 | 361-010Z | Pointer |
| C-20 | 236-035B | Window, Door (Right) | F-11 | 423-139A | Shaft, Tuning |
| D-1 | 217-053A | Case, Front | F-15 | 886-0010 | Dial Cord |
| D-5 | 444-111A | Damper Ass'y | G-1 | 217-0540 | Case, Rear |
| D-5-1 | 444-112A | Damper, Gear | G-2 | 532-205B | Rod Antenna |
| D-5-2 | 324-112A | Holder, Gear | G-3 | MAC1839I | Screw, MAC + 3x10 (For Rod Antenna) |
| D-6 | 353-025G | Screw, Special | G-5 | 536-917A | Terminal, Antenna |
| D-7 | 324-426A | Holder, Push Knob | G-6 | 442-761A | Spring, Battery (2 |
| D-8 | 442-634G | Spring, Knob | G-7 | 563-126F | Terminal, Battery |
| D-9 | 353-025G | Screw, Special (For VR PCB and Case Front) | G-8 | 442-714A | Spring, Battery (A) |
| D-10 | 321-656A | Bracket-Wire, Holder | G-10 | 442-760A | Spring, Battery (Y) |
| D-11 | 321-188A | Bracket, Counter | G-11 | 353-025G | Screw, Special (For 2P and Rear) |
| D-12 | 353-025G | Screw, Special (For Counter Bracket and Front) | G-15 | 353-041F | Screw (For Case fix) |
| D-15 | 353-025G | Screw, Special (For EQ PCB and Front Fix) | G-20 | 447-059A | Cushion, Speaker |
| D-16 | 517-114D | Tape Counter | G-21 | 354-601F | Washer, Metal |
| D-17 | 451-146D | Belt Counter | G-22 | 353-025G | Screw, Special (For Power Trans 3 oss Fix) |
| D-18 | 432-019B | Pulley, Motor | H-1 | 217-055A | Case, Speaker Front |
| D-20 | 423-002A | Shaft, Idear | H-2 | 217-056A | Case, Speaker Rear |
| D-21 | 353-025G | Screw, Special (For Deck and Front Case Fix) | H-3 | 541-136D | Speaker |
| E | 412-017A | Deck Ass'y | H-5 | 541-186B | Pizo, Speaker |
| E-1 | 419-011H | Deck Mechanism | H-6 | 224-085A | Grille Speaker |
| E-2 | 275-055G | Button, Deck (Pause) | H-7 | 334-058A | Stopper-2 |
| E-3 | 275-055H | Button, Deck (Stop) | H-8 | 353-025K | Screw, Special (For Speaker Case Fix) |
| E-4 | 275-055I | Button, Deck (F.F.) | H-9 | 564-004A | Cord, Speaker |
| E-5 | 275-055J | Button, Deck (Rew) | H-10 | 353-0520 | Screw, Special (For Stopper) |
| E-6 | 275-055K | Button, Deck (Play) | H-12 | 472-604J | Felt |

| Ref. No. | Mfr's Part No. | Description | Ref. No. | Mfr's Part No. | Description |
|----------|----------------|---------------------|----------|----------------|----------------------------|
| I-1 | 217-055A | Case, Speaker Front | I-9 | 564-004A | Cord, Speaker D = 3.5 (BK) |
| I-2 | 217-056B | Case, Speaker Rear | I-10 | 353-052D | Screw, Special |
| I-3 | 541-136D | Speaker | I-12 | 472-604J | Felt |
| I-5 | 541-186B | Piezo Speaker | J | 513-122B | PCB Ass'y, Main |
| I-6 | 224-085A | Grill Speaker | J-61 | 255-086B | Heatsink |
| I-7 | 334-058B | Stopper-R | J-62 | 253-008A | Shield, Plate (D) |
| I-8 | 353-025K | Screw, Special | | | |

• DECK MECHANISM

| Ref. No. | Mfr's Part No. | Description | Ref. No. | Mfr's Part No. | Description |
|----------|----------------|-----------------------------|----------|----------------|--------------------------|
| 11 | 99T-1079 | Pause Lever | 56 | 99T-0989 | Motor Rubber |
| 12 | 99T-0911 | Pause Lever Spring | 57 | 99T-0990 | Coller Screw |
| 13 | 99T-0912 | Pause Stopper | 58 | 99T-1101 | Motor Pulley |
| 14 | 99T-0921 | Button Lever Spring (C) | 59 | 99T-0980 | Main Belt |
| 16 | 99T-0915 | Button Lever Spring (A) | 62 | 99T-1026 | Eject Slide Lever |
| 17 | 99T-0916 | Play Button Lever Spring(S) | 63 | 99T-0953 | Eject Slide Lever Spring |
| 23 | 99T-1103 | Leaf Switch | 65 | 99T-1132 | PB Head |
| 27 | 99T-1055 | Head Base | 66 | 99T-1143 | RP Head |
| 28 | 99T-0924 | Sensing Plate Ass'y | 67 | 99T-1098 | Erase Head |
| 30 | 99T-0926 | Head Panel Spring (S) | 68 | 99T-1102 | Motor |
| 31 | 99T-0923 | Head Base | 72 | 99T-0961 | Tap Screw M2x4 |
| 35 | 99T-0929 | Pinch Roller Arm Ass'y | 77 | 99T-0964 | Cap Screw M2x7 |
| 36 | 99T-1081 | Pinch Roller Spring | 83 | 99T-0967 | P Washer C, 12x3x0.4 |
| 38 | 99T-1112 | Metal Guide | 84 | 99T-0968 | P Washer Cut |
| 39 | 99T-1130 | RF Pulley Arm Ass'y | 87 | 99T-1141 | Operation Lever |
| 40 | 99T-0932 | RF Pulley Arm Spring | 88 | 99T-1142 | Button Frame (S) |
| 42 | 99T-0934 | RF Belt | 89 | 99T-1030 | Button Lever Shaft |
| 47 | 99T-1116 | T-Up Roller Gear | 90 | 99T-0977 | FH Screw M2x7 |
| 48 | 99T-0940 | T-G Plate Spring | 91 | 99T-0970 | P Kick Lever (B) |
| 51 | 99T-0985 | S-Reel Ass'y | 92 | 99T-0992 | P Kick Lever-A |
| 52 | 99T-0986 | T-Reel Ass'y | 95 | 99T-0974 | P Kick Lever Spring |
| 53 | 99T-1119 | Rec Safety Lever | 97 | 997-1134 | Play Leaf Switch |
| 55 | 99T-0988 | Motor Bracket | 99 | 513-100A | PWB Leaf Switch |